

west of No. 5. It was blown down last winter. It grew from seeds from Kentucky, planted 54 years since. It was known to bear fruit only one year, and that was eight years since; then only a few nuts. It will be observed that Nos. 4, 5, and 6 are in a line and nearer together than any of the others, being only $1\frac{1}{2}$ miles apart at the extremes.

No. 7 is a thrifty tree growing on M. Reel's farm. It is from the same lot of seeds as Nos. 3 and 4. Is forty-five in hes in circumference, and annually bears a large crop of empty burs. On occasional years a few nuts have been found, never more than four or five. It is two miles from No. 3, and the same distance from No. 4.

No. 8 is a group of three trees, all standing within a few rods of one another, on J. Hurshey's place. They are from seeds from Ohio, planted by him in 1848, and are near one foot in diameter. Have borne chestnuts in abundance for more than twenty years, without one year of failure. These trees are $1\frac{1}{4}$ miles from No. 9.

No. 9 is a group of two trees standing near together on the J. Sitherland farm, grown from seeds which he planted thirty-five years since. Both bear fruit freely. "The burs are always full." They are $1\frac{1}{4}$ miles from No. 8. One tree is much smaller than the other, and is always fuller of nuts. The seeds were obtained from Perry county, Ind., which is about 70 miles away in a direct line, and if it is native there, is the nearest station of which I have any knowledge. These trees are $1\frac{1}{4}$ miles from No. 8. (The chestnut is native in both Perry and Spencer counties, Ind.)

No. 10 is a tree, from seed planted by J. Hoff, on his farm, 34 years since. It is four miles from No. 9, and annually bears a large crop of burs, but never has a chestnut been found under it.

The foregoing observations point to the following conclusions, though they cannot be considered as positive demonstrations:

(1) That in some cases the chestnut tree appears to be sparingly self-fertilizing, while in others it appears to be sterile for a long succession of years. See Nos. 1, 3, 7 and 10

(2) That trees grown from the seed of one tree, freely fertilize one another. See Nos. 4, 8 and 9.

(3) That a sterile tree, growing grafts from another sterile tree, becomes fertile when the grafts bloom, and sterile when they fail to bloom. No. 2.—J. SCHNECK, *Mt. Carmel, Ill.*

QUEER PLACES FOR FERNS.—I think I may claim a *new locality* for a common fern. While recently exploring an extensive live-oak hummock, I came to a lofty pine-tree, *Pinus australis*, I think, which had had a large notch cut in it, about three feet from the ground. Upon the base of this notch, with its rootstock firmly fastened to the tree by the exuding pitch, grew a brave little upstart of a *Woodwardia Virginica*, Willd., its three or four six inch-long fronds healthy even though dwarfed, and two of them well fruited. Several of the pinnæ had been glued fast to the side of the tree by a thin film of the pitch. Two years ago I saw large, handsomely-fruited fronds of the *Polypo-*

dium aureum, L., which grew in the same hummock. Upon investigation, I was surprised to find that they grew upon a live-oak tree. Except in one instance, where a single plant of this fern grew inside a hollow burned stump of some swamp tree, I had never seen or known that *P. aureum* would grow on any tree but the Palmetto, except where in two or three cases, roots had been transplanted to congenial homes on the trunks of cultivated date-trees here in town. One of the trunks of this live oak had been cut down, and upon this cut place, where the wood was softer from consequent decay, the fern had obtained a resting-place and had gone vigorously to work. This fall I visited the tree again, and the fern was flourishing finely. Further search in the woods rewarded me by showing me a second fern growing on another live-oak tree under the same conditions, and I obtained good specimens from both trees. A fact which added much to the interest of finding the *aureums* in these unexpected places is that there are no large Cabbage Palmetto trees in the vicinity from which the fern could have been transferred, and the fern itself is also very scarce in this region.

P. incanum on the trees, and *Osmunda cinnamomea* on the ground, are the other representatives of the fern family in the same hummock. The *O. cinnamomea* is very common everywhere beside the "branches," and has been bearing an abundance of fruited fronds during the past two months.

Polypodium incanum is by no means particular as to its habits, growing on live-oaks, hickory and cedar trees.—MARY C. REYNOLDS, *St. Augustine, Fla.*

CARNIVOROUS PLANTS. II.—EXPERIMENT NO. 2.—An ant was placed upon a leaf near the center of the disk, at 2 o'clock, June 4th, 1879.—

- 15 min. no change.
 - 30 " the submarginal tentacles (reflexed at first) now nearly at right angles to the blade.
 - 90 " only a slight change.
 - 4 hrs. marginal tentacles moving slightly.
 - 18 " the submarginal tentacles nearest the specimen much inflected, but as yet do not touch it. The marginal tentacles had moved only slightly from 1st note.
 - 38 " submarginal and central tentacles inflected, but only the latter touching the specimen.
 - 48 " about the same as the last.
 - 66 " a slight reflexing is apparent.
 - 73 " tentacles reflexing.
 - 117 " tentacles nearly all reflexed except a few of the central ones.
 - 144 " change only slight.
 - 157 " some of the submarginal and a few central tentacles have again inflected, but for what reason, I cannot tell.
- With a lens I could see no other animal or exciting substance of any kind upon the leaf!*